

1-26. (CANCELED)

27. (NEW) An apparatus for operating a gate (U), the apparatus comprising:

a pressure generating unit, which can be mounted in or on a ground surface, is provided with restoring springs (O) and a hydraulic circuit system to actuate an opening and closing mechanism for the gate;

a primary compression hydraulic cylinder (A) is hydraulically connected to an accumulator tank (C) to accumulate a portion of an applied force as an overpressure;

a secondary opening hydraulic cylinder (D) to open the gate (U) against the force of a closing spring (V), in that the overpressure is released through a duct to an expansion tank (B) through a check valve (G) which delays discharge of the overpressure for a desired time period; and

wherein the desired time period ends only subsequent to the passage the applied force past the apparatus and the gate and to the start of the reduction of the overpressure in the expansion tank and any excessive pressure peaks from the applied force are directed through an overpressure valve (I) back to the expansion tank.

28. (NEW) The apparatus according to claim 27, wherein the apparatus further comprises a lock mechanism to lock the gate in a ^{closed?} closing position and which is inactivated in an initial phase by an opening movement of a lock plunger in said hydraulic circuit.

29. (NEW) The apparatus according to claim 27, wherein ^{the} a pressure generating unit normally is mounted on each side of the gate (U), and comprises a stationary upwardly open exterior box (M) having spider legs (N), which provide improved stability by an attachment to the ground surface by means of fasteners and inside ^{the} the upwardly open exterior box an inverted vertically movable interior box (P) is telescopically mounted, compression springs (O) extending between inner facing bottoms of the two boxes, and the hydraulic cylinder (A) extends between the bottoms of the boxes, the hydraulic cylinder (A) contains a frostless liquid, ^{(e.g.,} water and glycol, to make the ^{pressure generating} unit operative between -30°C and +60°C.

30. (NEW) The apparatus according to claim 29, wherein the hydraulic cylinder is fastened to the bottom of the stationary box and a plunger of the hydraulic cylinder

is designed to be pressed against an inner side of the bottom of the moveable box, and thresholds (S) suitably provided on the upper side of the bottom of the moveable box, said thresholds being designed to detect and establish a running over-position, and a ramp plate (Q) is articulately fastened to the moveable box adjacent the upper side of the bottom to permit a car wheel to roll up and onto the said upper side of the moveable box.

31. (NEW) The apparatus according to claim 27, wherein the secondary opening cylinder (D) is mounted on a holder (W), which in turn is pivotally mounted on a fencing stake (X) to pivot relative thereto during the opening and closing process in relation to a force arm (Y), and the secondary opening cylinder (D) lies in a first plane above the holder (W) and the force arm (Y) in turn lies in a second plane above the cylinder (D), the opening cylinder (D) being able to freely move in relation to the holder (W), while the force arm is able to freely move in relation to the opening cylinder (D), and the force arm (Y) is shaped like a boomerang to pass around the stake in order not to collide with the stake (X).

B1 32. (NEW) The apparatus according to claim 28, wherein the gate (U) is designed to be closed against a second fencing stake (Z) having a contact surface or stop (Å) and when the gate has been opened and the desired time period has elapsed, the springs (O) will press the interior box back to an upper starting position and create an underpressure in the primary compression cycle, which will draw back liquid from the expansion tank so that the primary cylinder will be ready to start the entire operative cycle again and in the secondary cylinder the pressure will be reduced since liquid will return to the expansion tank through the check valve (G), permitting the closing spring to function and close the gate slowly, since a working fluid will be forced out of the secondary opening cylinder and through the check valve back to the accumulator tank.

33. (NEW) The apparatus according to claim 27, further comprising a first aerator (L) in the duct branch to the accumulator tank (C), a second aerator (M) in the duct branch to the opening cylinder (D) and check valves (E and F) in two duct branches from the pressure side of the compression cylinder (A), a manometer (J) connected after the check valve (F) in the branch, and an aerator (K) connected to the same branch.

34. (NEW) The apparatus according to claim 29, wherein ^{the} the entire pressure generating unit is enclosed by a downwards portion made of a reinforced plastic fabric in order to be able to simply spread out, and an upward portion covered by a steel net-reinforced rubber mat in order to partly seal against moisture and dirt and to support the applied force and the exterior rigid metal box is provided with four spider legs, each leg having holes in an outermost corner, through ^{houses?} which holes a bolt or screw may be inserted to securely fasten ^{the} the metal box in the ground.

35. (NEW) The apparatus according to claim 29, wherein the movable box is provided with a bearing surface which allows solely vertical movements within ^{the} the rigid box in that the pressing downwards of the interior box is caused by a car on the ramp, one end of which is movably inserted into ^{vertical} the box, which ramp is fastened in such a way, that the loose fastening to the interior box remains at the same point, seen in the direction of travel of the car, whereas another end of the ramp moves a short distance backwards in relation to the direction of travel of the car, the interior box being pressed downwards and the ramp lying substantially parallel to the ground.

36. (NEW) The apparatus according to claim 27, wherein the pressure generating unit is manufactured as a first module having two plastic hoses partly transferring the operative pressure to the secondary opening cylinder and partly returns hydraulic liquid from the expansion tank to the primary compression cylinder when an underpressure occurs, and when the applied force is removed from the pressure generating unit and the interior box is pressed upwards by the restoring springs, in that the accumulator tank, ^{the} the pressure meters, ^{the} the check valves, ^{the} the overpressure valve and their connections and attachments are manufactured as a second module, which can be placed in ^a a box, which can be fastened to a gate stake ^{or the like}, and in that the secondary opening cylinder with its holder, valve and power arm is manufactured as a third module, which preferably will be mounted on an existing stake in order to handle ^{some gate?} an existing gate.

37. (NEW) The apparatus according to claim 27, wherein the apparatus also comprises three measuring aeration points (2), a manometer (5), ^{some as before} a check valve (21), a pressure limiting valve (23) and a manual opening valve (25), in that, when the gate is closed, ^{the} the piston stem in the ^{vertical} cylinder (D) will be actuated by an accumulator pressure in the ^{accumulator} accumulator (B), plus the force of spring (V), in that ^{the} the piston stem (A)

will be actuated by the accumulator pressure in the accumulator (B), and in that the gate will be hydraulically locked through a pilot-guided check valve (25).

38. (NEW) The apparatus according to claim 37, wherein in order to carry out a manual opening ^{with it} the valve (25) will be opened manually by a bar in such a way, that, when the gate is opened, liquid will flow partly through the check valve to a negative side of the cylinder (D) and partly because of an equalization of the differential area to the accumulator (B), in that after a manual opening of the gate the gate will be closed automatically, because the same pressure exists on both sides of the piston in the cylinder (D), in that the force of the spring (V) and the area difference in the cylinder (D) will result in the closing, and when a manual opening is carried out, the force, required for an automatic closing, will be loaded.

61 39. (NEW) The apparatus according to claim 37, wherein for an automatic opening, when the cylinder (A) is under the influence of the applied force, pressure and flow will pass through the check valve, in that the gate will start opening through the first choke (Ha), in that the effect will be loaded into the accumulator (C), at the same time as pressure and flow start decreasing through ^{the} second choke (Hb), the first choke (Ha) having a dimension much larger than ^{the} second choke (Hb) in order that a complete opening of the gate will have time to occur and will remain for a certain time, before the discharge will have an effect, and in that at the same time as the gate is opened, ^{the} cylinder (D) will enter into a negative position, ^{the} hydraulic medium on ^{the} positive side of ^{the} cylinder jointly with the accumulator (B) being designed to fill the hydraulic cylinder (A), in that ^{the} pilot guided check valve (25) then is kept open by the pressure from the negative side, in that the apparatus also comprises an overload protection, since the valve (23) will be opened at a pressure above 10 bars, and in that a repeated load on the hydraulic cylinder (A), before the operative cycle has been concluded, will result in, that the overpressure and any excess working fluid will be emptied through the valve (23).

40. (NEW) A pressure regulating apparatus for operating a gate (U), the apparatus comprising:

a pressure generating unit having means for receiving an applied force to operate a hydraulic circuit to actuate an opening and closing mechanism for the gate, a restoring spring (O) and a primary compression hydraulic cylinder;

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an overpressure developed by the primary compression hydraulic cylinder is passed to an accumulator tank connected via a first hydraulic passage to the primary compression hydraulic cylinder to accumulate a portion of an applied force as an overpressure;

an actuation pressure developed by the primary compression hydraulic cylinder is passed to a secondary opening hydraulic cylinder via a second hydraulic passage to open the gate against the force of a closing spring (V); and

b1 an expansion tank for directly receiving the overpressure from the accumulator tank through a duct having a check valve (G) which delays discharge of the overpressure until at least the applied force is withdrawn from the means for receiving the applied force; and

wherein any excessive pressure peaks from the applied force are passed directly from the pressure generating unit through an overpressure valve (I) back to the expansion tank.
